

Appl. No. 10/600,393
Reply to Office Action of March 25, 2005

Attorney Docket No. 2002-0066 / 24061.461
Customer No. 42717

REMARKS

Claims 20-22, 29 and 31 have been amended. Claims 1-33 are present in the application. In view of the foregoing amendments, and in view of the following remarks, Applicants respectfully request reconsideration.

Comment Regarding Advisory Action

In reply to the Office Action mailed on March 25, 2005, Applicants previously filed a Response on April 29, 2005. In reply to that Response, the Examiner issued an Advisory Action on May 23, 2005. In the Advisory Action, the Examiner refuses to enter Applicants' April 29 Response, stating that it raises new issues because:

Previously, claim 20 required the HF pre-clean prior to formation of each gate insulator layer. However, claim 20 as amended no longer requires the HF pre-clean steps to be performed prior to formation of each gate insulator layer. Note that Claim 20 as amended . . . does not require the recited process step[s] to be performed in any particular sequence.

In short, the Examiner takes the position that Applicants changed the scope of Claim 20. However, as pointed out in the remarks of Applicants' April 29 Response at lines 8-9 on page 11:

This change [to Claim 20] improves the form of Claim 20, but does not add any limitation that was not already present in Claim 20, and does not modify the intended scope of Claim 20.

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It is not clear that the steps recited in Claim 20 would make sense if they were performed in any arbitrary sequence. Nevertheless, the foregoing amendments to Claim 20 include the addition of phrases reciting:

... said forming of said first dielectric layer being carried out after
said performing of said first hydrofluoric (HF) pre-clean
procedure; ... said performing of said oxidation procedure being
carried out after said performing of said second hydrofluoric (HF)
pre-clean procedure ...

These phrases are fully consistent with the language of Claim 20 as it existed at the time of issuance of the March 25 Office Action, because at that time Claim 20 recited "a hydrofluoric (HF), pre-clean procedure performed prior to formation of each gate insulator layer". Applicants again emphasize that they are not changing Claim 20 in any way that would modify the intended scope of Claim 20. Accordingly, Applicants respectfully submit that amended Claim 20 does not present any new issue, and is entitled to reconsideration on the merits. Claim 20 is discussed in more detail at a later point in these remarks.

Allowed Claims

With reference to the Office Action mailed on March 25, 2005, Applicants note with appreciation the indication that Claims 1-19 have been allowed.

Comment on Statement of Reasons for Allowance

In lines 11-15 on page 12, the March 25 Office Action sets forth a statement by the Examiner of reasons for allowing Claims 1-19. Applicants agree that Claims 1-19 are allowable. However, Applicants do not agree in all respects with the statement of reasons for allowance.

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For example, Applicants respectfully submit that the stated reasons should not be interpreted to mean that there are no other reasons which separately and independently support the allowability of independent Claim 1 and/or dependent Claims 2-19.

Independent Claim 20

When the pending Office Action was issued on March 25, 2005, independent Claim 20 recited "A method . . . featuring a hydrofluoric (HF), pre-clean procedure performed prior to formation of each gate insulator layer". The foregoing amendments to Claim 20 replace this single limitation reciting multiple pre-clean procedures with separate but equivalent limitations that each recite a respective pre-clean procedure performed before formation of a respective dielectric layer. In particular, Claim 20 now recites:

performing a first hydrofluoric (HF) pre-clean procedure;

forming a first dielectric layer over said silicon containing substrate, said forming of said first dielectric layer being carried out after said performing of said first hydrofluoric (HF) pre-clean procedure; . . .

performing a second hydrofluoric (HF) pre-clean procedure; and

performing an oxidation procedure to form a second dielectric gate insulator layer, . . . said performing of said oxidation procedure being carried out after said performing of said second hydrofluoric (HF) pre-clean procedure . . .

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This change improves the form of Claim 20, but does not add any limitation that was not already present in Claim 20, and does not modify the intended scope of Claim 20.

Independent Claim 20 stands rejected under 35 U.S.C. §102 as anticipated by Gonzalez U.S. Patent No. 6,383,861. This ground of rejection is respectfully traversed, for the following reasons. The PTO specifies in MPEP §2131 that, in order for a reference to anticipate a claim under §102, the reference must teach each and every element recited in the claim. The rationale underlying the §102 rejection of Claim 20 is set forth in the paragraph that bridges pages 2-3 of the Office Action. However, this paragraph fails to discuss whether Gonzalez discloses any cleaning procedure. Applicants have studied the Gonzalez patent, and respectfully submit that Gonzalez does not disclose a hydrofluoric (HF) cleaning procedure that would meet the recitation in Claim 20 of "performing a first hydrofluoric (HF) pre-clean procedure". Gonzalez therefore fails to disclose each and every limitation recited in Applicants' Claim 20, and thus does not anticipate Claim 20 under §102. Accordingly, it is respectfully submitted that Claim 20 is allowable over the Gonzalez '861 patent, and notice to that effect is respectfully solicited.

Dependent Claims

Claims 21-33 depend from Claim 20, and are also believed to be distinct from the art of record, for example for the same reasons discussed above with respect to Claim 20.

Conclusion

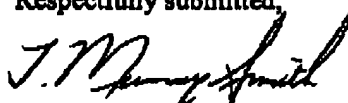
Based on the foregoing, it is respectfully submitted that all of the pending claims are fully allowable, and favorable reconsideration of this application is therefore respectfully requested. If the Examiner believes that examination of the present application may be advanced in any way by a telephone conference, the Examiner is invited to telephone the undersigned attorney at 972-739-8647.

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Although Applicants believe that no fee is due in association with the filing of this Response, the Commissioner is hereby authorized to charge any additional fee required by this paper, or to credit any overpayment, to Deposit Account No. 08-1394 of Haynes and Boone LLP.

Respectfully submitted,



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Date: June 2, 2005

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Enclosure: None

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